To: Planning Board September 6, 2008

From: James Russell, 5 Palmer Lane

Subject: RQR Supplemental Special Permit Re Access

Planning Board Members,

As an abutter to the proposed Residences at Quail Ridge, I am writing to respond to some of the points raised over the past several months of discussion regarding access to RQR. I am not able to attend the September 9 meeting in person, so I hope you will accept these points in writing in place of comments at the public hearing.

1. In R. Martin's July 19 memo, paragraph 13, she looks for specific examples in Acton where emergency only secondary access was provided. The Acton SRR, section 8.1.19, state that for more than 40 dwelling units on a single access street, a secondary means of access, "adequate in the opinion of the board," shall be provided. At least the following Acton neighborhoods have emergency-only access (or no secondary access), which was apparently deemed "adequate":

   Bellows Farm (~300 units with condos), Avalon (~300? units), Great Road Condos (~168 units), Acorn Park (~80 units), Northbriar (~60 units). In addition, Ethan Allen Dr has over 100 units in a single access neighborhood, but may predate some of the regulations.

   The first three of the above have either similar or significantly greater number of units than the proposed RQR.

2. Specific guidelines relevant to the traffic and neighborhood impacts:

   a. The Acton SRR Design Standards indicate a maximum volume of 250 cars per day for 20-foot pavement width low intensity local streets as in Acorn Park.

   b. The Subdivision and Site Plan Handbook[1] (which is a key reference cited in the original RQR Special Permit decision 08-02) states "residential access streets should be designed so that no section conveys an Average Daily Traffic greater than 250."

   c. The traffic studies from Conley Associates, Woodland Design Group, and BSC Group all agree that full access to the proposed RQR will result in volumes exceeding 300 cars/day at both connections.

   d. Along the affected Acorn Park roads, the median home frontage is 113 ft (Palmer Ln & Acorn Park Dr) and 127 ft (Hazelnut St.), and the majority of homes have less than 150 ft of frontage. This "driveway density" results in on-street parking being common, which significantly narrows the streets, creating further safety and traffic concerns. The above reference further states that for lot widths of 75-150 feet "a 28-foot minimum width is specified"[2], further supporting the conclusion that Acorn Park roads are not designed for the additional traffic volumes.

[1] Listokin and Walker, 1989, pg 45. See attached excerpt.

[2] Listokin and Walker, pg 50. Interestingly, this reference is cited in the Board decision 08-02, section 2.24, to support the opposite conclusion, based on incorrect frontage data from the neighborhood.

e. The AASHTO Geometric Design of Highways and Streets[3] uses fewer than 400 vehicles per day as the definition for "very low volume local roads"; however, it also notes that "traffic volume is not a major factor" in designing residential streets. Instead, the major functional requirements include "the ability for vehicles to pass one another, the need to pass parked vehicles, [and] the need to provide for occasional larger delivery vehicles." By this standard, the existing conditions in Acorn Park – with on-street parking and narrow, curved streets – argue against the addition of significant additional traffic.

3. At the January 22, 2008 meeting, B Reichlen described several goals in reaching a decision: Protecting the rights and bylaws of the Town, protecting the interests of current and future town residents, and protecting the rights of the developer. Taking these in turn:

   a. As described above, the secondary access requirement can be met with emergency access, and there is ample precedent in Acton for doing so. Also, by limiting access to emergency-only, the Acton SRR Design Standards are respected for the Acorn Park roads, as are the standards suggested by the references underlying the SRR in section 2.5.

   b. With respect to the interests of all Acton residents who may travel on Route 2A, the traffic studies and Syncro simulations demonstrate that when there is no regular connection between RQR and Acorn Park the traffic distribution is better, and the intersections of 2A with Acorn Park Rd and with Skyline Drive function better. All three traffic engineers agreed with the simulations showing that if there were full through connections, the Acorn Park Dr / Harris Rd / 2A intersection would be disproportionately affected, resulting in longer delays and more dangerous left turns.

   c. As for the interests of future RQR residents, the developer has stated that he believes it would be the preference of these residents to not have regular through connection with Acorn Park, which would potentially expose their Senior Residence to additional through traffic from commuters, teenage drivers, soccer carpools, etc. Furthermore, it has been demonstrated to the Board that effective emergency access can be maintained in all weather, and does not compromise the safety of the RQR residents. This is confirmed in the Emergency Services Analysis commissioned by the Town.

   d. The interests of current Acorn Park residents are well known: Preserve the safety and livability of our streets for the kids, walkers, joggers, bicyclists and others who are a fixture within the community. And in case it hasn't been made clear, we *welcome* pedestrian and bicycle connection to the RQR neighborhood, and the increased opportunity for non-automotive circulation.

   e. Regarding the interests of the developer, note that the developer and the Acorn Park residents have agreed that gated emergency access is the best solution, and the developer's main interest at this point is speedy approval of the Board. In addition, for the most part Acorn Park residents have not objected to the developer's right to build 174 new housing units in our back yard, even though we lived through three years of blasting and construction to create the current golf course, and with potentially years more to come…

4. Finally, at the July 8, 2008 meeting, B. Reichlen summed up the key issue as being "Risk. Risk to Acorn Park vs. risk to RQR residents and emergency vehicles". According to the Town-sponsored

[3] American Association of State Highway and Transportation Officials, 2001. Cited in decision 08-02 and BSC Group study

MRI Emergency Services study: “Full street access between the Residences at Quail Ridge and Acorn Park is not appropriate for reasons of public safety.”[4]

I hope the board takes the above points into account, and votes to limit the access between Acorn Park and RQR to emergency-only access.

Furthermore, in light of the conclusions from the two Town-sponsored reports, I would encourage the board to adopt the recommendations from the MRI study, with a gated connection at Hazelnut St., and no vehicular connection at Palmer Lane. I suggest the board ask the developer to create a walkway / bikeway / greenway connection at Palmer Lane instead, to encourage non-automotive circulation.

Thank you,

James Russell
5 Palmer Lane
Acton

Attachment: Excerpt from The Subdivision and Site Plan Handbook, pages 45-51

[4] Page 9

EXHIBIT 2

RESIDENTIAL STREET HIERARCHY: DEFINITION

Residential Street Type	*Function*	*Guideline Maximum ADT*
1) Residential Access Street	Lowest order of residential streets. Provides frontage for access to lots, and carries traffic having destination or origin on the street itself. Designed to carry the least amount of traffic at the lowest speed. All, or the maximum number of housing units, shall front on this class of street. An east-to-west orientation is considered desirable to allow for maximum solar lot configuration. Residential access streets should be designed so that no section conveys an ADT greater than 250. Each half of a loop street may be classified as a single residential access street, but the total traffic volume generated on the loop street should not exceed 500 ADT, nor should it exceed 250 ADT at any point of traffic concentration.	250 (each loop) 500 (total)
2) Residential Subcollector	Middle order of residential street. Provides frontage for access to lots, and carries traffic of adjoining residential access streets. Designed to carry somewhat higher traffic volumes with traffic limited to motorists having origin or destination within the immediate neighborhood. Is not intended to interconnect adjoining neighborhoods or subdivisions and should not carry regional through traffic. Subcollectors shall be designed so that no section conveys an ADT greater than 500. Each half of a loop subcollector may be classified as a single subcollector street, but the total traffic volume conveyed on the loop street should not exceed 1,000 ADT, nor should it exceed 500 ADT at any point of traffic concentration.	500 (each loop) 1,000 (total)
3) Residential Collector	Highest order of residential streets. Conducts and distributes traffic between lower-order residential streets and higher-order streets—arterials and expressways. Carries the largest volume of traffic at higher speeds. Function is to promote free traffic flow; therefore, parking and direct access to homes from this level of street should be prohibited. Collectors should be designed so that they cannot be used as shortcuts by non-neighborhood traffic.	3,000 (total)
4) Arterial	A higher order, interregional road in the street hierarchy. Conveys traffic between centers; should be excluded from residential areas.	3,000+

EXHIBIT 2 (continued)

Residential Street Type	*Function*	*Guideline Maximum ADT*
5) Special Purpose Streets		
a) Rural Residential Lane	A street serving a very low-density area [minimum 2-acre zoning]. The maximum ADT level limits the number of single-family homes on this road to 20.	200
b) Alley	A service road that provides secondary means of access to lots. On same level as residential access street, but different standards apply. Used in cases of narrow lot frontages. No parking shall be permitted; should be designed to discourage through traffic. ADT level corresponds to that of residential access street. Number of units served should not exceed 76.	250 (each loop) 500 (total)
c) Cul-de-Sac	A street with a single means of ingress and egress and having a turnaround. Design of turnaround may vary. Cul-de-sacs shall be classified and designed according to anticipated ADT level: a residential access cul-de-sac will have a maximum ADT level of 250, and a subcollector cul-de-sac will have a maximum ADT level of 500. Cul-de-sacs may also be classified as alleys depending on function.	250 (residential access) 500 (subcollector)
d) Marginal Access Street	A service street that runs parallel to a higher-order street and provides access to abutting properties and separation from through traffic. May be designed as residential access street or subcollector according to anticipated daily traffic.	500 (residential access total) 1,000 (subcollector total)
e) Divided Street	Municipalities may require streets to be divided in order to provide altemate emergency access, to protect environmental features, or to avoid grade changes. Design standards should be applied to the combined dimensions of the two-street segments as required by the street class.	500 (residential access total) 1,000 (subcollector total) 3,000 (collector total)
f) Stub Street	A portion of a street which has been approved in its *entirety*. Permitted as part of phased development; may be required if part of overall adopted master plan of the municipality.	500 (residential access total) 1,000 (subcollector total) 3,000 (collector total)

3. CARTWAY WIDTH

The cartway is the area of the street within which vehicles are permitted. It includes moving and parking lanes, but not shoulders, curbs, sidewalks, or swales. Minimum cartway width must be sufficient to allow safe passage of moving traffic and is computed by adding up the number of traffic and parking lanes required by the intensity and form of development. Two issues arise, however: 1) the dimensions of the parking and moving (or traffic) lanes—or lane width; and 2) the number of parking and moving lanes that should be required for each street in the street hierarchy.

Lane width. *Parking lane* widths must be large enough to accommodate the vehicle, allow room for maneuvering, and permit the opening of doors without impeding traffic flow. In most residential subdivisions, on-street parking consists of parallel parking, in 8-foot parking lanes. *Moving lane* widths differ according to the function of the road. For minor roads, narrower widths are adequate, but as traffic and truck volume increase, the width of the moving lane also increases.

Number of lanes. Number of lanes is a function of intensity of development and volume of traffic. Fewer lanes are required and cartway dimensions are narrower for minor streets that serve areas with less concentrated development and where on-street parking lanes are not needed. More lanes are required and the cartway surface is wider for streets that must accommodate a greater volume of traffic and where on-street parking is needed.

The standards specified in this ordinance, while narrower than those in some municipal ordinances, are based on recommendations by many authorities and are sufficient to meet the functional needs of each street category. Streets are among the most costly of development improvements, and excessive requirements—while not the only reason—have been a contributing element to rising housing prices. As in other areas of subdivision control, local officials must weigh the costs and benefits in setting minimum pavement width requirements.

a. Cartway widths should vary for the same classification of street depending on the form and intensity of development. For example, a development that consists of houses widely spread out on two- or three-acre lots is less likely to require parking lanes on

3. CARTWAY WIDTH

a. Cartway width for each street classification shall be determined by parking and curbing requirements which are based on form and intensity of development.

b. Intensity of development shall be based on lot frontage as follows:

INTENSITY OF DEVELOPMENT

	Low	*Medium*	*High*
Lot Frontage (in feet):	*more than 150*	*75 to 150*	*less than 75*

c. Cartway width shall also consider possible limitations imposed by sight distances, climate, terrain, and maintenance needs. In order to minimize street costs, the minimum width assuring satisfaction of needs shall be selected.

d. Cartway widths for each street classification are shown in Exhibit 3.

the street than a development of townhouses, even though the streets carry the same amount of traffic. Parking is more likely to be accommodated on-site in the large-lot development, and narrower streets without parking lanes are adequate to handle the needs of the large-lot development.

b. Lot frontage is used to measure intensity of development. Development density is not used because density figures are averages of housing units by number of acres. If the density of a proposed development of 40 units is two units to the acre, on a 20-acre tract it could mean that each unit is on a half-acre lot; but it could also mean that development is clustered, with all the units clustered on three acres and the rest remaining as open space. Density on those three acres would then be 13 to 14 units to the acre. Although overall density is identical in the two hypothetical cases, provision of parking lanes would be less pressing in the former development configuration than in the latter.

The frontage figures for different development intensities that are suggested in this ordinance reflect New Jersey development patterns. Other states or municipalities may wish to adopt figures that more accurately reflect the local situation.

c. This provision is intended to introduce some flexibility into setting minimum cartway standards in different localities. Municipalities in cold climates may need wider cartways, for example, to accommodate snow storage. Similarly, as terrain becomes hilly, curves increase, and wider cartways are required.

d. The cartway widths shown in Exhibit 3 are computed by adding up the number of traffic and parking lanes required by the intensity and form of development. Minimum moving lane width, with one exception, is 10 feet. While some authorities recommend 9-foot lanes, most find 10-foot lanes more satisfactory, especially since most residential subdivision streets will provide some on-street parking. Curbing is recommended where there is parking, and the presence of curbs tends to make cars veer towards the center of the roadway, making 10-foot lane widths necessary. As traffic volume increases up the street hierarchy, lane widths increase. Nine-foot moving lane widths are considered adequate, however, for rural residential lanes since they serve very low-density development with limited traffic.

The cartway widths shown in Exhibit 3 are explained below in more detail for each street in the street hierarchy.

EXHIBIT 3
CARTWAY WIDTH

*Street Classification**	*Travel/Moving Lane*	*Subtotal*	*Parking* [a] *Lane*	*Subtotal*	*Total Cartway Width*
RESIDENTIAL ACCESS STREET					
Intensity of Development					
Low	two 10'	20'	none	0	20'
Medium	two 10'	20'	one 8'	8'	28'
High					
On-street parking	two 10'	20'	one 8'	8'	28' [b]
Off-street parking	two 10'	20'	none	0	20'
RESIDENTIAL SUBCOLLECTOR					
Intensity of Development					
Low	two 10'	20'	none	0	20'
Medium	two 10'	20'	one 8'	8'	28'
High					
One-side parking	two 10'	20'	one 8'	8'	28'
Two-side parking	two 10'	20'	two 8'	16'	36'
Off-street parking	two 11'	22'	none	0	22'
RESIDENTIAL COLLECTOR					
Intensity of Development					
Low	two 12'	24'	none	0	24'
Medium and high	two 12'	24'	none	0	24'
SPECIAL PURPOSE STREETS					
Rural residential lane	two 9'	18'	none	0	18'
Alley	two 9'	18'	none	0	18'
Cul-de-sac (stem) [c]					
Marginal access street [d]					
Divided street [e]					
Stub street [f]					

Notes: *See Exhibit 2 for definition of street hierarchy and Article Five, Section E.3.b. for definition of low, medium, and high intensity of development.

a. Refers to parallel parking.

b. The 28' cartway also would accommodate two 8-foot parking lanes and one 12-foot moving lane.

c. Cartway widths of cul-de-sacs should conform to standards of either residential access or subcollector streets as dictated by anticipated average daily traffic. Cul-de-sac turnarounds shall have a minimum cartway radius of 40 feet.

d. Cartway widths of marginal access streets should conform to standards of either residential access or subcollector streets as dictated by anticipated daily traffic. If the classification is a subcollector requiring a 36-foot cartway, cartway width may be reduced to 28 feet since frontage is restricted to one side of street.

e. Cartway widths of divided streets should conform to standards of street classification as dictated by anticipated average daily traffic and be applied to aggregate dimensions of the two street segments.

f. Cartway widths of stub streets should conform to the standards of the street classification as dictated by anticipated daily traffic.

Residential Access Streets

Lane widths. Moving lanes should be 10-feet wide—a dimension not overly wide, yet adequate for the low traffic volume and 25-mph speed limit typical on residential access streets. An additional 8 feet of cartway should be added when a parking lane is provided.

Low development intensity (lot widths 150+ feet). In subdivisions with large lots and where average daily traffic will be low, there will be little to no demand for on-street parking. A 20-foot cartway width is specified (two 10-foot moving lanes). In the rare cases a vehicle must park on the street, the low traffic volume will allow other vehicles to pull around it with little inconvenience.

Medium development intensity (lot widths 75–150 feet). Generally, the demand for on-street parking increases as lot size decreases. To accommodate occasional parking, a 28-foot minimum width is specified for minor residential roads at this density (one 8-foot parking lane and two 10-foot moving lanes).

High development intensity (lot widths less than 75 feet). For subdivision lots less than 75 feet in width and where off-street parking is not provided, residential access streets should be designed to anticipate a demand for on-street parking. A 28-foot wide cartway is specified. This width allows the flexibility to accommodate one 8-foot parking lane and two 10-foot moving lanes, or two 8-foot parking lanes and one 12-foot moving lane. Even where parking occurs on both sides of the street, there is curbside room for one car to pull over to let another pass. On-lot parking should also be required for each housing unit. Where ample off-street parking is provided, a narrower 20-foot cartway width will be sufficient, providing two 10-foot moving lanes.

Subcollectors

Lane widths. As with residential access streets, subcollector moving lanes should generally be 10 feet wide. Parking lanes, where necessary, are an additional 8 feet in width each for parallel parking.

Low development intensity (lot widths 150+ feet). A 20-foot pavement width is recommended for two 10-foot moving lanes.

Medium development intensity (lot widths 75–150 feet). A pavement width of 28 feet is recommended for two 10-foot moving lanes and one 8-foot parallel parking lane.

High development intensity (lot widths less than 75 feet). A pavement width of 28 feet is specified for two 10-foot moving lanes and one 8-foot parallel parking lane; if parallel parking on both sides of the street is anticipated, a 36-foot cartway is recommended for two 10-foot moving lanes and two 8-foot parking lanes. Where off-street parking is available, a 22-foot cartway width is needed, providing two 11-foot moving lanes (a wider width is necessary since there are no parking lanes to provide added space where the lane is not occupied).

Residential Collectors

Lane width. Collectors should be designed to promote free traffic flow with minimum interruption or curb cuts. Moving lanes should be 12 feet wide for maximum safety. Because of the high volume of traffic, parking should not be allowed on collectors.

All development intensities. A 24-foot minimum cartway width is specified providing for two 12-foot moving lanes.

Special Purpose Streets

Rural residential lanes. Rural residential lanes require a minimum cartway width of 18 feet providing two 9-foot lanes. The low traffic volume on this type of road permits a narrower cartway.

Alleys. Alleys also require a minimum cartway width of 18 feet providing two 9-foot lanes. A narrower cartway would be appropriate for one-way alleys, however.

Cul-de-sacs: stems. Cartway widths correspond to the width specified for the appropriate classification.

Cul-de-sacs: turnarounds. Minimum cartway radius of a round turnaround should be 40 feet. This minimum standard should also be viewed, however, as the maximum standard, since a turning radius of more than 40 feet creates large expanses of pavement. Parking is not recommended because of the large amount of pavement required, but where necessary, parking should be provided on the inside of the turnaround. For "T" or hammerhead turnarounds, the width of the "T" should be 60 feet, and all dimensions should provide adequate turnaround for garbage trucks. (This type of turnaround should be used only in very low traffic situations and to provide access to no more than 5 lots because of the hazardous movements required for backing.)